NC/PMC/YD/W1/2018-19/DBM2 Date: 08-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.55 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	98.45	90-100
19.0	87.35	71-95
13.20	75.25	56-80
4.75	52.80	38-54
2.36	34.25	28-42
0.300	17.45	7-21
0.075	6.70	2-8

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NC/PMC/YD/W1/2018-19/DS2 Date: 09-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1295**	900
2	Marshall Flow at 60°C, mm.	**2.85**	2.0 - 4.0

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NC/PMC/YD/W1/2018-19/DBM3 Date: 09-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	97.45	90-100
19.0	89.25	71-95
13.20	72.55	56-80
4.75	45.35	38-54
2.36	37.10	28-42
0.300	18.15	7-21
0.075	5.90	2-8

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NC/PMC/YD/W1/2018-19/DBM4 Date: 10-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.51 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	96.45	90-100
19.0	87.35	71-95
13.20	68.10	56-80
4.75	50.60	38-54
2.36	35.15	28-42
0.300	16.90	7-21
0.075	6.05	2-8

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NC/PMC/YD/W1/2018-19/DBM5 Date: 11-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.54%**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	98.35	90-100
19.0	87.10	71-95
13.20	76.30	56-80
4.75	45.15	38-54
2.36	35.80	28-42
0.300	18.25	7-21
0.075	7.10	2-8

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NC/PMC/YD/W1/2018-19/BB1 Date: 10-01-2019

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.80^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**117.0 cm**	40
3.	Flash point	**236^0 C**	Minimum 220^0 C
4.	Softening point	**51.0^0 C**	Min. 47

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NC/PMC/YD/W1/2018-19/CB1 Date: 10-01-2019

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS 383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	21.95 %	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	27.65 %	Not more than 35.0 %
3.	Water absorption, %	0.38%	Not more than 2.0 %
4.	Specific gravity	2.62	------
5.	Soundness	5.78%	Max. 12 % in Sodium Sulphate

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NC/PMC/YD/W1/2018-19/BC1 Date: 14-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	97.15	90-100
9.5	85.25	70-88
4.75	65.45	53-71
2.36	54.90	42-58
1.18	41.05	34-48
0.600	32.65	26-38
0.300	21.35	18-28
0.150	15.80	12-20
0.075	9.05	4-10

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NC/PMC/YD/W1/2018-19/BS1 Date: 16-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1375**	900
2	Marshall Flow at 60°C, mm.	**3.40**	2.0 - 4.0

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NC/PMC/YD/W1/2018-19/BC2 Date: 16-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	96.45	90-100
9.5	83.90	70-88
4.75	71.05	53-71
2.36	51.55	42-58
1.18	46.95	34-48
0.600	35.10	26-38
0.300	26.30	18-28
0.150	17.75	12-20
0.075	8.05	4-10

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NC/PMC/YD/W1/2018-19/BS2 Date: 17-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1365**	900
2	Marshall Flow at 60°C, mm.	**3.70**	2.0 - 4.0

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NC/PMC/YD/W1/2018-19/BC3 Date: 17-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.43 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	98.60	90-100
9.5	85.10	70-88
4.75	65.25	53-71
2.36	54.60	42-58
1.18	43.90	34-48
0.600	32.75	26-38
0.300	24.95	18-28
0.150	18.55	12-20
0.075	8.20	4-10

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NC/PMC/YD/W1/2018-19/BS3 Date: 18-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1355	900
2	Marshall Flow at 60°C, mm.	3.40	2.0 - 4.0

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NC/PMC/YD/W1/2018-19/BC4 Date: 18-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.43 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	96.25	90-100
9.5	85.15	70-88
4.75	72.05	53-71
2.36	54.85	42-58
1.18	45.15	34-48
0.600	32.45	26-38
0.300	24.95	18-28
0.150	16.55	12-20
0.075	9.35	4-10

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NC/PMC/YD/W1/2018-19/BS4 Date: 19-01-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvement to roads and drains at Maruthinagara, Papanna Badavane balance main and cross roads in Ward no-01, Yelahanka sub division.}

Ref.: Material testing/PMC/18-19,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Technical Manager (West), KRIDL.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1345**	900
2	Marshall Flow at 60°C, mm.	**3.15**	2.0 - 4.0

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